

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A micromixer for mixing at least two fluids which react to form precipitates or suspensions, having a first channel for supplying a first sub-flow (6) and having a second channel for supplying a second sub-flow (7), which open in flat entry gaps (19, 20) into a mixing and reaction zone (10) and leave the mixing and reaction zone (10) via an outlet channel (11), characterized in that a reflux barrier is arranged between the mixing and reaction zone (10) and at least one channel for supplying a sub-flow (6, 7, 37).
2. (Currently Amended) The micromixer as claimed in claim 1, ~~characterized in that~~ wherein the reflux barrier is designed as a non-return valve.
3. (Currently Amended) The micromixer as claimed in claim 2, ~~characterized in that~~ wherein the prestress of the non-return valve is provided by mechanical means (13, 14, 15).
4. (Currently Amended) The micromixer as claimed in claim 2, ~~characterized in that~~ wherein the non-return valve is electrically, pneumatically, hydraulically or electromagnetically drivable.
5. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 4~~ claim 1, ~~characterized in that~~ wherein the non-return valve is designed as a membrane arrangement.
6. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 5~~ claim 1, ~~characterized in that~~ wherein deposits are cleaned from the reflux barrier in the course of operation by cleaning pins, which insert into the opening uncovered by the reflux barrier

- during each opening and closing process and are essentially designed with a needle shape.
7. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 6~~ claim 1, ~~characterized in that~~ wherein entry gaps (19, 20) for the sub-flows (6, 7, 37) are designed as narrow annular gaps, so that the sub-flows (6, 7, 37) meet each other as thin film layers.
 8. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 7~~ claim 1, ~~characterized in that~~ wherein the entry gaps (19, 20) are bounded by microstructured components (16, 9), which contribute to dividing the sub-flows (6, 7, 37) into individual sub-streams.
 9. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 8~~ claim 1, ~~characterized in that~~ wherein the outlet channel (11) has a smooth and widening geometry.
 10. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 9~~ claim 1, ~~characterized in that~~ wherein a feed for an envelope stream, which encloses the mixed sub-flows (6, 7, 37) when they emerge, is provided in the outlet channel (11).
 11. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 10~~ claim 1, ~~characterized in that~~ wherein the response pressure and/or the opening behavior of the reflux barrier, the width of at least one of the inlet gaps and/or the characteristic dimensions of the mixing and reaction zone are externally adjustable by mechanical, hydraulic, pneumatic, electrical or electromagnetic means and/or are automatically varied as control variables of an outer or inner control loop.
 12. (Currently Amended) The micromixer as claimed in ~~one or more of claims 1 to 12~~ claim 1, ~~characterized in that~~ wherein two or more valve mixer units according to the invention are arranged in a common housing with common supplies of the sub-flows and a common outlet channel, so that they can be operated in parallel.

13. (Currently Amended) The use of the micromixer as claimed in ~~one or more of claims 1 to 13~~ claim 1 for precipitation and/or crystallization reactions, the preparation of nanoparticles, carbon nanotubes, fullerenes or particles/nanoparticles having a plurality of layers of different substances arranged in a concentric sequence.